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JUN 17 1999

ENTRIX, INC.
(FRONT DESK)

To: Jean Baldrige
Re: Lower Santa Ynez River Fish Management Plan
June 15, 1999

I just wanted to offer a little regarding the Plan. I attended the public meeting in Santa Barbara in May. I think the whole effort has been very worthwhile, and I hope it can be kept up. The habitat enhancements are especially exciting, including at Hilton Creek and on private land with conservation easements, as well as the Fish Reserve Account.

My overall feeling is that we need somehow to maintain a "vision" of steelhead recovery in southern California. I have tried to follow this issue. The LA Times has covered this a lot with respect to Ventura County. I've enclosed a number of recent articles on the topic. You've probably seen most of these - you're quoted in one of them. It does seem like the Ventura River may offer the best opportunities around. It is pretty clear that the Santa Ynez is limited in what amount of steelhead recovery we can get out of it, although this may be more than we might have thought before (I'm referring to the rescue of the 800 trout last year). I think the Plan overall is a good analysis of the Santa Ynez watershed and what we can do there; I just think we have to keep the regional picture in mind, especially if steelhead are flexible enough to return to watersheds completely separate from their natal origin. That was something I didn't know before - that a fish that originated in the Ventura River watershed might actually spawn in the Santa Ynez.

Hopefully the federal listing by NMFS will serve to provide a regional vision. Also along these lines, I agree with Craig Fusaro of California Trout that reconnecting the lower and upper Santa Ynez watersheds needs to be kept on the table. I realize the problems with trap-and-truck, but with the bulk of the cool, dependable water above Cachuma, we need in the long run to try to find ways to reconnect the ocean-going fish with this habitat. Of course, the same issue arises with respect to Matilija Dam and the Malibu Creek dam. Along with trap-and-truck, I think the hatchery supplementation issue needs to be kept alive. I know this type of thing can be controversial, but some of the Indian tribes in Oregon and Washington have used this with some success.

I've also included an article by Marc Reisner in High Country News, as well as an article from the Chico newspaper from January 1999. The work on Butte Creek strikes me as a fantastic example of habitat restoration and the hope that we do have, despite all the pressures from human civilization, of actually restoring some of the damage we have done to rivers, estuaries, and oceans. I don't think the huge (relative to the last 50 years) return of Spring Run Chinook to Butte Creek in 1998 was all due to the dismantling of the dams there. High flows in 1998 and before in 1995 had a lot to do with it, of course. But it serves as a great example and encouragement for this kind of work. I'd like to think we could mimic this with the enhancements on Hilton Creek, with the Fish Reserve Account, and by removing barriers like Matilija Dam (I know - maybe we can't do it because of all the silt - but we need to be thinking with an admittedly idealistic vision where we can).

Ross A. Gerrard
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Monday, November 30, 1998

JUN 17 1999

Extinction of Special Fish May Hit a Snag

ENTRIX, INC.
(FRONT DESK)

Nature: Once-thriving southern steelhead, declared endangered in 1997, has a powerful defense mechanism built into its genetic makeup. But will it be enough?

By STEVE HYMON, Times Staff Writer

[A]s far as fish stories go, this one has to rank right up there.

And it's a story that's been in the making for millennia. Silver and blue weighing up to 10 pounds, the southern steelhead trout is strong and swift and, fishy standards, even smart and cunning.

For generations this beautiful fish not only has survived, but thrived, in an area infamous for its endless cycle of drought, fire and flood. To perform its signature act, migrating from ocean to upstream spawning grounds, the steelhead navigated an obstacle course through the creeks and rivers that once ran unhindered from Southern California's mountains to the sea.

Sometimes the fish would slither across the sand in a few inches of water to reach a creek's mouth. Once in the stream, it would dart under boulders and leap over small waterfalls. Anything to reach the place where it could spawn and produce the next generation of resilient steelhead.

No one knows just how many steelhead live in Southern California today. Some researchers say the fish, declared endangered last year, will soon be extinct. Others aren't so sure.

"We've done everything we possibly can to eradicate these fish," says Dennis McEwan, a fisheries biologist and steelhead expert with the California Department of Fish and Game. "But the steelhead are still there."

The wildlife and scientific communities are now debating what to do about the southern steelhead, how to protect it and how to balance its needs against those of man. But this isn't just the classic people-versus-nature story, though there's plenty of that in this tale. The story of the southern steelhead is also a tale of genetics--genetics that might explain how all species evolve.

It's Survival of the Most Adaptable

Southern steelhead are still here, most biologists say, because they evolved to beat the odds.

"These fish have had to be extremely flexible because of the [climate] in Southern California," says Sara Chubb, a fisheries biologist with the Los Padres National Forest. "They are a hearty fish that can jump far, have a lot of stamina and stream smarts because, in order to survive, they have to make it to places with marginal habitat."

That habitat once extended from the Santa Maria River near Pismo Beach down to Baja California. Today, the steelhead's range is believed to extend no farther south than Malibu Creek, where a silt-choked dam blocks steelhead from migrating upstream.

Tens of thousands of years ago--no one is exactly sure when--there was an ancestral population of Pacific salmon. As the years passed, the population was separated as glaciers overtook the land, earthquakes pushed up mountains and other forces molded the Earth.

Eventually, these separated populations developed into various subspecies of Pacific salmon, such as Chinook and coho. The steelhead, which is actually classified as a salmon, also established its own niche in nature. But evolution hardly stopped there. Different stocks of steelhead evolved, each unique to its particular habitat. And, within these stocks, another peculiar trait developed. Some steelhead are anadromous, meaning they are born in freshwater and later run to the sea. Others are non-anadromous, spending their entire lives in freshwater. These fish are known as rainbow trout.

"This is a species that has an enormous palette of life histories to choose from," says Jennifer Nielsen, a biologist and geneticist with the U.S. Forest Service.

Steelhead evolved, in other words, to play by the hard rules Mother Nature set down in Southern California.

Then, people came along and the rules began to change. Impassable barriers like dams cut off the headwaters where steelhead like to spawn. Pollution robbed the fish of clear water. Lagoons were drained or filled in, taking away the transition zone where steelhead make the chemical transformation to saltwater.

"The health of the species depends upon the health of the component parts," says Rob Jones, a spokesman with the National Marine Fisheries Service. "If we lose more and more of those parts, the ability of the fish to survive will decline until we lose everything."

Much has already been lost. Twenty-three stocks of steelhead trout have gone extinct this century, and another 43 (including the southern steelhead) face a moderate to high risk of extinction, according to the fisheries service. The reason: habitat loss and degradation.

The Santa Ynez River, near Solvang, was once considered to have the highest population of steelhead in Southern California. In fact, in 1944 the California Department of Fish and Game found approximately 1 million juvenile steelhead trapped in a drying portion of the river. Today, the number of adult steelhead in the Santa Ynez is probably less than 200.

Many biologists and ecologists express a guarded optimism that the southern steelhead will not be lost. It has survived this long, they say, and there is still good habitat left in Southern California.

The problem, however, is that the steelhead often can't get to the habitat. Solstice Creek is a small, perennial stream on National Park Service land flowing from the Santa Monica Mountains to Malibu. But a culvert under Pacific Coast Highway prevents steelhead from reaching it.

In Matilija Creek, in Santa Barbara and Ventura counties, wild rainbow trout are stuck upstream behind the silted-up Matilija Dam. What would happen if their path were again clear? After 50 years, would they show anadromy and run to the sea?

Sespe Creek, north of Fillmore in Ventura County, is the last free-flowing major stream in Southern California. Steelhead once migrated 80 miles up the Sespe and, today, most of the creek lies within protected wilderness. But fish have difficulty reaching the Sespe because it drains into the Santa Clara River, which suffers from environmental problems.

"Those fish went to places you would never believe there were fish," says Sara Chubb. "There seems to be something inherently bred in their genetics that makes them want to go further, to keep repopulating."

Southern Steelhead's Amazing Secret

Throughout most of this century, the decline in the number of steelhead in Southern California was of little concern to the populace and government alike.

After all, steelhead could always be found in the wetter climates of Northern California and the Pacific Northwest. In mighty rivers like the Klamath or the Rogue, a 30-pound steelhead could snap a man's \$1,000 fly rod in two. In these places, men line up elbow to elbow at river's edge, hoping to hook a winter-run steelie and experience what one guidebook calls the "apogean angling experience." Conversely, the southern steelhead was thought to be a freakish, negligible population of strays from the north that, perhaps unfortunately, was doomed. Fishing regulations in Southern California were few and, often, not enforced. Besides, the sea and reservoirs offered more-plentiful angling opportunities.

Then, in 1994, came a remarkable--and controversial--discovery. That year, Jennifer Nielsen, the forest service geneticist, used DNA fingerprinting technology to determine that southern steelhead had more genetic diversity than any other type of steelhead. Quite suddenly, southern steelhead were no longer a trivial presence.

"When the study came out, all hell broke loose," says Nielsen. "I had calls from people asking if I was certain these were steelhead I had studied. These were fish just waiting for the door to open because genetically they had a lot to say."

Like circles inside a tree stump, genetic diversity is believed to be a sign of age--the more genetic diversity a species has, the older the species is believed to be.

Nielsen and many other biologists believe this could mean that southern steelhead are the oldest steelhead of them all. Perhaps they are even native to the area (harsh environments are thought to produce genetic diversity):

This, in turn, could mean that all steelhead stocks evolved from southern

steelhead or that southern steelhead may have repopulated northern areas following the last ice age.

"To keep every cog and wheel is the first precaution of intelligent tinkering," wrote the naturalist Aldo Leopold, half a century ago. Leopold's rule has since become the guiding principle in efforts to save endangered species.

Or, to put it another way, if you really want to save a species, save all its diverse parts. Because, one of those parts--like the southern steelhead's ability to cope with warm water--just may be the key to adapting to something like global warming.

A Long-Closed Door May Someday Reopen

Many biologists believe steelhead never had a grip on Malibu Creek, so much as a loose grasp on it.

In the drought years, much of the creek probably dried up. Steelhead and rainbow trout may have survived in a few deep pools. Or, some may have sought refuge in the sea.

Other steelhead, too, likely perished. More than anything, Malibu Creek was a wild, dynamic, ever-changing place. Until people began taming the land.

About 2 1/2 miles upstream from the ocean, Malibu Creek turns abruptly to the east and then enters a steep and narrow gorge. From the point of view of an engineer, this notch in the canyon walls was the perfect place to anchor Rindge Dam.

In 1926, the year Rindge Dam was completed, the entire lower section of Malibu Creek was a part of the 17,000-acre Rindge family ranch. The family needed water for its ranch, and the concrete arch dam--reinforced with railroad ties from the dismantled Hueneme, Malibu and Port Angeles Railroad--was the perfect solution.

But the dam had a problem: sediment. Within 40 years, the small reservoir behind the dam had completely filled with the heavy silt load Malibu Creek carries. The creek no longer backed up behind the dam, but instead flowed right over the top.

There has been talk of removing the dam for 30 years, but this September the talk turned serious when the Army Corps of Engineers said it would consider a feasibility study of modifying or removing Rindge Dam.

According to the corps, it's a project that could take almost a decade to complete--if it does indeed go forward. Local sponsors will have to carry almost half the cost. And the price could be considerable: A 1994 federal study said removing the dam could cost at least \$4 million, maybe even \$17.5 million.

"The biggest thing we need to do is to reconnect those fish with their upstream habitats," says McEwan. "If we can just work on that one thing, and if dams like that one are made passable, then the fish can take advantage of those good, wet years where there is a lot of flow. Right now it doesn't matter, because they can't get there."

Malibu Creek has been dammed in four places, but biologists have deemed Rindge Dam as the most harmful to steelhead because it squeezes the fish into 2 1/2 miles of stream between the dam and the ocean. A 1990 study estimated that removing the dam and fixing three minor barriers would allow the steelhead to reach five more miles of upstream habitat, including two major tributaries--Cold Creek and Las Virgenes Creek.

After all these years, would steelhead swim above the dam if given the chance? If so, could the fish end up reaching suburbs like Calabasas and Agoura Hills--the last place most people would expect to see a 2-foot-long fish returning from the sea?

"I'm not aware of any data indicating steelhead were ever above Rindge Dam, but we consider the behavior of fish in other streams to form an opinion of what the fish might have done, and will do, in Malibu Creek," says Anthony Spina, a biologist with the fisheries service. "It's my opinion that any time we can open additional habitat for steelhead, we should."

Perhaps the most intriguing thing about a recovery effort in Malibu Creek is this: There are 80,000-plus people living in the Malibu Creek watershed, and biologists see the creek as an opportunity to prove that

people and fish can coexist. Helping the steelhead would provide incentive to further clean up the creek's diminished water quality. There's even talk of one day building a steelhead interpretive trail along Malibu Creek. (5)

"I used to think it was fish versus people," says McEwan. "Now, it's fish versus funding. We don't have to have wildlife in a park or zoo. We can make room for these creatures within our own environment."

Steve Casey, who used to fish for steelhead in Malibu Creek before they were declared endangered, puts it differently.

"All my life, I've heard about the way California used to be," says Casey. "Well, I'm sick of hearing it and I don't want to tell my kids the same thing about Malibu Creek and the steelhead."

If It's Not Extinct, It Should Be

"Fifty years ago every live brook, runnel and stream that made a pretense of carrying some head of water though the summer drought had its quota of steelhead moving upstream." --from the book "Steelhead to a Fly," written by Clark Van Fleet.

Almost a century after Van Fleet's observation about steelhead in 1901, no one knows how many southern steelhead still exist. There are few people paid to look for them, and even when they do, the fish are hard to find.

But the one thing everyone agrees on is this: There are nowhere near as many steelhead as there used to be. Jennifer Nielsen points out that under the rules of traditional conservation biology, the southern steelhead trout should be extinct. Once the population of a species drops below a certain threshold, mortality outpaces reproduction and extinction is inevitable.

Yet, the southern steelhead has stubbornly resisted that rule.

In August, Anthony Spina, a marine fisheries biologist, went snorkeling in Topanga Creek. Steelhead were often caught in the creek in the 1960s and early 1970s. But no one had seen a steelhead in the creek since 1983, and many biologists thought water pollution had done them in.

Wading from pool to pool along the creek, Spina looked down and saw a 5-inch juvenile steelhead.

Later, when the soft-spoken and cautious Spina was asked about it, his answer was: "Interesting."

Interesting, indeed, that the southern steelhead trout, at least on this one day and in this one place, was still there.

Saga of the Steelhead

Steelhead trout have a life cycle similar to salmon. The Southern California strain of steelhead has dwindled to nearly zero from a variety of factors, including loss of habitat due to water diversions, dams, urban development and pollution.

Steelhead are anadromous, meaning they are born in fresh water, migrate to the ocean and return to fresh water to spawn. Unlike most salmon, not all steelhead return to their native streams, and a small percentage of steelhead can spawn more than once. Steelhead that live their entire lives in fresh water are called rainbow trout.

Life Cycle

Steelhead are nothing if not adaptable, and this is especially true of the southern strain, which has historically dealt with extreme changes in Southern California's climate. Steelhead must wait until winter rains raise creek levels high enough to breach the sand bar that forms at the mouth of most creeks. In dry years, they may not even get the chance.

1. Female buries eggs several inches deep in nests in river gravel. Male fertilizes eggs, which hatch in 3-5 weeks and become "alevins."

2. Surviving alevin, or fry, remain in stream's deep pools to avoid predators, and feed on insects and crustaceans. 3. Fry turn into smolts--shedding scales and turning silver--and usually spend 1-3 years in river system. Smolts adapt to salt water by staying in estuary where fresh and salt water mix.

4. Steelhead migrate to ocean and typically remain there for 1-3 years
5. When ready to spawn, steelhead use sense of smell to locate their birth streams. Female finds suitable spawning area and the process begins anew

Steelhead Trout Size:

In the past, full-sized adults in Malibu Creek measured to 20 inches in length. Northern strains can reach 40 pounds.

Coloring: A steel-blue color, which distinguishes them from the multi-hued rainbow trout.

Habitat and diet: Steelhead require cool, clear water. Malibu Creek is believed to be the southern strain's southernmost location. At sea, adults are typically found close to ocean's surface and prefer to eat squid, small fish and crustaceans.

Distribution of Steelhead Trout

To Find Out More

For more information on the plight of the steelhead, check the following websites: National Marine Fisheries Service: www.nwr.noaa.gov California Trout: www.caltrout.org/steelhead/steelindex.htm California Dept. of Fish & Game: www.dfg.ca.gov/ Sources: National Marine Fisheries Service; "California Coast & Ocean"; "Field Guide to the Pacific Salmon" California Trout. Researched by JULIE SHEER/Los Angeles Times

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Trickle of Support
To Some Supervisors, Removing Old Matilija Dam Is an Idea That
Holds Water

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JUN 17 1999

By GARY POLAKOVIC, Times Staff Writer

ENTRIX, INC.
FRONT DESK)

[A] proposal to tear down a dam in the Ventura County back country sounds radical, but it is an idea that just might work.

At least the county Board of Supervisors seems to think so and is intrigued enough to encourage the idea, although it stopped short of endorsing the proposal at its meeting Tuesday.

Supervisor Susan Lacey, whose district includes much of the Ventura River, said removing Matilija Dam north of Ojai holds appeal as a way to let sand flow to fast-eroding beaches.

Supervisor John Flynn said removing the dam would help save steelhead, an ocean-going trout he used to catch from the river 40 years ago, but that is now sliding toward extinction.

And Supervisor Kathy Long, whose district includes the dam, indicated that the proposal has enough merit that she would like to find a way to get it done.

"We've got a real good chance to do something major here. There's not anything divisive here. We need to go forward," Flynn said.

For now, the dam is safe. The board took no action on the proposal, preferring instead to encourage interested parties to work together to find a way to remove the dam. The county flood control agency owns the structure.

Costs of removing the dam are every bit as imposing as the concrete monolith straddling the upper reaches of the Ventura River.

The Casitas Municipal Water District, which operates the dam, says a study by UC Santa Barbara puts the cost for removal at about \$75 million. The supervisors said the county cannot afford that and would have to find money elsewhere.

Nevertheless, advocates of tearing down Matilija Dam were undaunted. They say they are not expecting much from the board at this point. Indeed, they say they are concentrating efforts on uniting various groups and agencies to tear down the dam.

"It's not that there are political obstacles; there are funding obstacles," said John Buse of the Environmental Defense Center.

Matilija Dam is under scrutiny because critics say it has outlived its purpose and does more harm than good. Built in 1948, it was designed to capture sediment to reduce flood risks downstream and to store water for growers and residents in the Ojai area.

But today, the dam holds little water and does not hold back sediment because it is full of dirt. Meanwhile, it blocks 20 miles of spawning grounds that steelhead could use, officials say.

The case for removal is being championed by Ed Henke, a former Ventura resident now living in Oregon. He laments the loss of the fish, which he used to catch in local streams when he was a boy in the 1930s. Henke, who calls the dam "a gigantic public nuisance," plans to present his case to the Beach Erosion Authority for Control Operations and Nourishment at 9 a.m. Friday at Carpinteria City Hall, 5775 Carpinteria Ave.

In an Oct. 22 letter to Henke, William T. Hogarth, regional administrator for the National Marine Fisheries Service, said removal of Matilija Dam would be "one of the most beneficial actions that could be taken to help rebuild the steelhead population on the Ventura River." The letter also says water diversions at Robles Diversion Dam downstream are also an obstacle to fish migration.

But removing dams is time-consuming and complicated. Environmental studies must be done. Flood control concerns must be addressed. Water

supplies need to be protected. It takes years to answer all those questions, said Mike Gauldin, Interior Department spokesman.

Nonetheless, the idea of removing dams across the West is rapidly gaining favor among fishermen, recreational river users, environmentalists, biologists, Indian tribes and some water agencies. Plummeting salmon populations up and down the West Coast have forced a reevaluation of dams.

The fisheries service is studying whether to remove four big dams considered harmful to salmon from the lower Snake River in the Pacific Northwest. The agency will make a recommendation by the end of 1999.

Some economists argue that so-called in-stream values, resulting when rivers flow free, have more economic value than storing the water in reservoirs. Dams also provide 25% of California's electrical energy, although none of it comes from Matilija Dam.

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Sunday, December 6, 1998

Demolishing Dam May Not Help Fish

Environment: Critics suggest there are cheaper, simpler ways to revive population of endangered steelhead trout in Matilija Creek.

By GARY POLAKOVIC, Times Staff Writer

[A] proposal to remove Matilija

Dam near Ojai to save the endangered southern steelhead trout has gained favor with environmentalists, but a growing number of critics say it would be costly, complicated and potentially dangerous for the few remaining steelhead left in Southern California.

A variety of scientists, government officials and two recent studies contend there are cheaper and simpler ways of restoring the steelhead's habitat than spending millions of dollars to dismantle a 145-foot-tall dam.

Removing the dam is "very attractive to talk about, but it's mind-boggling to do," said Alex Sheydayi, deputy director of public works for Ventura County. "Someone needs to look at this whole picture other than tearing down the dam. It's very complicated."

The proposal to tear down the 51-year-old dam on the Ventura River is part of a national crusade that has already led to the destruction of dams in several states. The campaign against Matilija is being led by Ed Henke, who lives in Oregon and has championed recovery efforts for salmon in the Northwest. He returned to his boyhood home in Ventura in November and began rallying support against Matilija.

"That dam was a historical error that needs to be corrected," Henke said. "If we're going to have a great river and a great fishery, then we're going to have to take that dam down. There's no way around it."

Groups such as Friends of the River, the Surfrider Foundation and the Environmental Defense Center have signed on to the dam-busting proposal. Officials at the National Marine Fisheries Service also endorse the dam's removal, provided it's done properly. And Ventura County's Washington lobbyist is seeking federal aid for the project.

The reason for the concern is that Matilija Dam sits on one of the last remaining stretches of steelhead trout habitat in Southern California, 19 miles of spawning streams in Matilija Creek, enough to sustain 1,100 adult steelhead.

As recently as 60 years ago, tens of thousands of the metallic-colored, ocean-going trout migrated up the Ventura and Santa Clara rivers to the mountains, where they spawned in shallow creek beds. Prized by anglers for their cunning and power, the steelhead can leap 5-foot-high barriers and muscle through currents powerful enough to sweep a man away. But today--as a result of development, pollution and water barriers such as dams--the number has dwindled to a few hundred fish in Southern California.

The southern steelhead was declared an endangered species in August 1997.

So far, the National Marine Fisheries Service, which is charged with protecting steelhead under the Endangered Species Act, has not developed a strategy for restoring the fish. Absent such a plan, Matilija Dam has become a target for environmentalists, in part because, if the fish is to be saved, it will be saved in Ventura County, with its extensive back country and freshwater streams.

"Ventura County is ground zero with respect to recovering steelhead south of San Francisco," said Jim Edmondson, conservation director of California Trout Inc., a sportfishing organization. "If we're going to have any hope in the next 10 years of recovering the steelhead, these efforts will have to be focused on the Ventura and Santa Clara rivers."

Built at a time when the nation's dam builders were taming rivers all across the continent, Matilija Dam was designed to prevent flooding on the Ventura River and store water for farmers and Ojai Valley residents. But

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it has been dogged by problems for years. Made of unstable concrete, the dam's top 30 feet were removed in 1965. It filled nearly to the brim with sediment years ahead of schedule and no longer protects against floods or holds much water, according to officials.

"It was a fiasco from the start," Sheydayi said. "Its value is not very significant. If the dam all of a sudden disappeared, it would have a minuscule impact on the water supply. I don't think anyone would be hurt by [removing] it. I don't think we'd notice."

The fate that may await Matilija Dam has been carried out elsewhere. Throughout the nation, obsolete dams are coming down to help migratory fish. Interior Secretary Bruce Babbitt has taken a sledgehammer to small dams in North Carolina and Northern California. Three were removed in Wisconsin, one in Maine and another in Oregon during the past two years.

"We breached the dams and the fish came back immediately," said Babbitt spokesman Jamie Workman. "It's a whole new way of thinking. Dams are not forever."

Studies Raise Some Questions But some experts are beginning to have second thoughts about the wisdom of pulling down Matilija Dam. Two recent studies raise questions about the project. One of the studies was prepared in April as a thesis project by graduate students at the UC Santa Barbara Bren School of Environmental Science and Management. The other was prepared by Walnut Creek-based ENTRIX Inc. and Woodward-Clyde Consultants of Santa Barbara last December.

The UCSB study says it would cost \$64 million to \$82 million to remove the dam and the sediment that has backed up behind it. Though expensive, excavating sediment is necessary because it reduces the impact on fish and property owners downstream.

The cost could soar to \$150 million if habitat above and below the dam is restored and debris from the demolished dam is hauled away, according to the ENTRIX report.

Henke said he hopes the dam could be removed for less. He also said there are benefits to removing the dam that have nothing to do with steelhead recovery. Without the dam, sand could be flushed to beaches to stem coastal erosion.

In an August 1997 letter to California Trout, California Department of Fish and Game Director Jacqueline Schafer estimates removing Matilija Dam could cost as little as \$3 million or as much as \$45 million, depending on how sediments are handled. However, those figures underestimate by nearly half the amount of debris in Matilija Reservoir.

Digging and disposal of the 6.1 million cubic yards of mud, boulders and trees behind Matilija Dam account for about 90% of its removal cost, according to the UCSB study.

A cheaper alternative would be to gradually lower the dam and allow the river to skim away mud over several years and wash it downstream to beaches. But that option could release enough silt to "decimate the remaining steelhead populations" in the Ventura River and increase danger of destructive floods, according to the UCSB report.

The report by ENTRIX warns "the adverse environmental impacts associated with removing Matilija Dam are greater and more complex than those impacts associated with removal of other dams that are closer to the ocean. Increased sediment loading in the highly developed Ventura River would . . . potentially increase property damage due to flooding."

The Problem With Robles Moreover, even if Matilija Dam was eliminated, steelhead might never reach that far upstream. Other impediments--such as the Robles Diversion Dam two miles below Matilija--block their passage. Critics say any recovery plan must deal with Robles dam, even before Matilija.

"Robles is the place to focus our immediate attention," Edmondson said. "It is the No. 1 problem."

Since 1960, Robles dam has diverted water from the Ventura River and Matilija Reservoir into Lake Casitas. Robles lacks a fish ladder, which would give steelhead access to several miles of quality habitat in the north fork of Matilija Creek even if Matilija Dam was left alone. Fish screens would also help, officials say.

. "Providing access to habitats upstream of Robles Diversion Dam is one of the most important actions that can be taken to improve steelhead populations in the Ventura River," states the ENTRIX study. The report says it would cost only \$1 million to \$2 million to install fish passage devices at Robles dam.

"You get a lot better bang for your buck getting [steelhead] up over Robles dam," said ENTRIX fisheries biologist Jean Baldrige.

Other actions that might help the steelhead include improvements to the fish ladder at the Freeman Diversion Dam in the Santa Clara River. That would enable more steelhead to reach Sespe Creek above Fillmore, opening 50 miles of habitat.

"If you get more adult steelhead to the Sespe, then you get more reproduction, and that could mean a lot more fish," Edmondson said.

The Ventura River and its tributaries could be made more fish-friendly by adding gravel, native vegetation and objects where fish could hide, such as roots and logs, the report says. Also, flows of water must be increased during dry spells to enable steelhead to navigate shallow stretches of the Ventura River. Without extra water, fish will not be able to reach Robles dam, much less habitat behind Matilija Dam upstream, according to the ENTRIX study.

Then there are the bridges, concrete aprons across streams and culverts that have turned the Ventura River into a formidable obstacle course for migrating fish. Replacing or redesigning those structures would help the fish, too, without touching Matilija Dam.

"The largest impediment to half of the historical habitat is the Matilija Dam," the UCSB study concludes. "[But] it is uncertain if dam removal alone would improve conditions enough for the fish to recover their numbers. . . . Many other plans that would be much less costly could restore steelhead numbers in the region."

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Sunday, November 29, 1998

PERSPECTIVE ON THE ENVIRONMENT, 2 Views of Matilija Dam

Structure Should Come Down for Sake of Beaches, Steelhead

The effort would help reestablish the beach replenishment processes and preserve an endangered species.

By ED HENKE

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ENTRIX, INC.
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[I] grew up in Ventura during the

1930s and '40s, and the life was simpler and easier. There were numerous opportunities for a young person to interact with the great outdoors, as there was an abundance of fish, wildlife and natural resources easily accessible--free natural capital for all to enjoy.

In the early days, the old Anacapa Hotel in Ventura would fill up with people from all over Southern California during the trout and steelhead seasons, a local tradition at the time.

John Lorenzana and William "Andy" Anderson lived on Ventura Avenue, and as late as 1946 would hurry down to the Ventura River at the foot of Ramona Street and each catch a limit of three large adult steelhead--and still get to the school bus in time for their first-hour class. During one lunch hour in 1944, a number of classmates drove me down to the mouth of the river, and I caught three large adult steelhead and was back in time for my fifth-hour class.

Before Thanksgiving and Christmas, there were shotgun clay target shoots for turkeys at the foot of Seaward Avenue.

This era came to an abrupt close after World War II. Great natural gifts and traditions freely available for young and old alike were rapidly disappearing.

In January 1994, following my retirement from the business world, I began a historical research project on anadromous salmonids (salmon, trout and related fish that spawn in fresh water but live in the sea) in Southern California coastal waters. When the federal government declared the southern steelhead an endangered species, I narrowed my focus to the Ventura River and advocated removal of the now worthless Matilija Dam to save these fish and to help reestablish sand for eroding Ventura County beaches.

Through previous research, I had estimated that at optimal production periods, the Ventura River system annually produced more than 66,000 pounds of salmonids and more than 16,000 adult steelhead averaging four pounds. As late as 1946, an estimated 5,000 adult steelhead were spawning in the Ventura River system. Chinook or king salmon, which elsewhere have reached record weights of 125 pounds, had been documented in the Ventura River in 1881.

In July I completed this research and presented copies to the Ventura County Board of Supervisors. On Nov. 3, I made a plea before the board, asking the supervisors for a resolution advocating complete removal of Matilija Dam.

They agreed in theory but felt further evaluation was necessary.

In 1941, Secretary of War Henry L. Stimson introduced to Congress on behalf of the Army Corps of Engineers its recommendations for the building of four dams on the Ventura River system as proposed by Ventura County officials. The corps gave thumbs down, as none of the dams would provide flood control or water storage on a cost-effective basis. Citizens had also expressed concerns about safe sites.

But the Ventura City Council championed the idea, and in 1945 a water development bond issue that had failed on two previous occasions was passed by Ventura County voters and construction began.

Almost immediately after Matilija Dam construction started in 1946, problems plagued it. Ventura County sued the construction firm over engineering problems and lost, with a \$33,000 court assessment. Against the recommendations of a professional, sand and gravel from the Santa Clara River were used and mixed with alkali in the cement. This created

an alkali-reactive aggregate condition, causing failing and deteriorating concrete. There was internal swelling, external cracking, disintegration of the dam's concrete wall in the upper 20 to 30 feet, which had to be removed; safety factors of concrete were well below acceptable minimal levels for such arch dams.

And there were other problems. The layer of silt and rock in the stream bed was 20 feet greater than estimated. And the abutments have continued to move during the dam's lifetime.

The problems led to the dam's footbridge being dynamited and the dam being notched twice, down from 163 feet to approximately 130 feet. The dam backs up an estimated 11 million cubic yards of silt and other material. It provides no flood control and minimal water storage.

I urge the complete removal of Matilija Dam and its mountain of silt / sediment / debris for the following reasons:

- * Public safety. It's better to take the dam down in a planned and orderly manner than to risk its collapse because of floods or earthquake.

- * To reestablish the beach replenishment processes. Sand trapped by the dam should be allowed to resume the natural process of nourishing beaches eroded by ocean waves.

- * To help preserve the southern steelhead, an endangered species with only 20 stream miles of refugia area remaining, all of it above Matilija Dam.

- * To reestablish historical in-stream values and socioeconomic benefits. Restoring the natural flow of the Ventura River would be good for people as well as fish.

Future generations would thank us for these efforts.

Ed Henke, 71, Grew up in Ventura and Now Lives in Ashland, Ore

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Sunday, November 29, 1998

PERSPECTIVE ON THE ENVIRONMENT, 2 Views of Matilija Dam

Removal Would Destroy an Asset

Taking out the dam would be costly and provide no guarantee of benefits. Instead we should explore rehabilitating it for storage, flood control.

By RONALD L. RINDGE

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[P]roponents of removing the Matilija Dam cite two reasons for doing so:

- * To restore full sediment flow to the beaches.
- * To provide additional spawning areas for steelhead trout, which would help save them from extinction.

The sediment trapped by the dam has come about over a 50-year period. The dam does not trap all sediment, because much of it is in suspension in the water flowing over the dam during peak storm runoff and does reach the beaches. Whether the sediment-flow argument is valid depends on whether the sediment trapped by the dam each year justifies the cost of removing the dam.

The argument that removing the dam would help save the steelhead by increasing its spawning area is weak. There is no guarantee that removing the dam would bring back steelhead to this waterway.

Steelhead thrived below the dam for many years after the dam was built in 1948. Are there any steelhead now in the Ventura River? How many steelhead have returned to the Santa Clara River since the Freeman Diversion Dam and fish ladder were constructed for millions of dollars years ago? If there are no or very few steelhead, manual transport to upper spawning areas should be considered.

The decline of steelhead in Southern California has been caused by many factors, primarily the degradation of marine and stream waters resulting from the ever-increasing urbanization of coastal watersheds.

It is significant that the impetus to remove Matilija Dam is coming from special fish interests and taxpayer-funded public agencies that seem to have little concern for cost-benefit analysis. Not only would removing the dam cost as much as \$75 million, according to one estimate, but doing so would destroy a multimillion-dollar asset that could be rehabilitated for critical water shortage and flood-control purposes.

Taxpayers are not clamoring to spend \$75 million on a Las Vegas gamble that removal of the dam will solve Ventura County's beach erosion problems or "save the steelhead."

The option of rehabilitating the Matilija Dam to full storage capacity and flood-control capability needs to be seriously examined.

- - -

Ronald L. Rindge of Moorpark Is the Grandson of Pioneer Malibu Rancher May Knight Rindge, for Whom Rindge Dam on Malibu Creek Is Named.
Environmentalists and Steelhead Advocates Are Also Seeking the Removal of Rindge Dam

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Tuesday, January 26, 1999

Gallegly Calls for Study of Matilija Dam's Removal

Nature: Congressman says structure may have outlived its usefulness and should come down. Environmentalists welcome support.

By GARY POLAKOVIC, Times Staff Writer

[B]lackers of a plan to remove Matilija Dam may have found an ally in a Ventura County congressman who believes removing the structure has merit because it could save fish and restore sand flows to the coast.

In an action likely to focus more attention on the controversial proposal, Rep. Elton Gallegly (R-Simi Valley) has called on federal engineers to begin an investigation on how to remove the dam. It would be a first step toward determining whether the proposal makes environmental or economic sense.

"It appears the dam may have outlived its usefulness and may be causing more problems than it is solving," Gallegly said in a news release issued Monday. "If removing it will solve our beach erosion problem and help steelhead trout to recover from its endangered species status, and if its removal is cost-effective, I could support its removal. This study will begin to answer those questions."

Gallegly said he discussed the issue during a meeting last week with Col. John P. Carroll at the Army Corps of Engineers office in Los Angeles. The two discussed removal of the dam, flood control on Santa Paula Creek and dredging at county harbors.

Matilija Dam was built in 1948 to prevent floods, and to store water for citrus growers and residents in the Ojai Valley.

Today it is nearly filled to the brim with mud and is widely viewed as obsolete. It holds little water and acts as a 145-foot-tall barrier to endangered southern steelhead trout trying to reach 20 miles of prime spawning stream in Matilija Creek.

By weighing in on the dam dispute, Gallegly adds an influential and prominent voice to a growing chorus of calls to tear down the dam.

For the most part, environmentalists have attempted to rally additional support for the proposal. Already a majority of the Ventura County Board of Supervisors and the National Marine Fisheries Service have expressed interest in the plan.

"He's on the right track there," Ron Bottorff, chairman of Friends of Santa Clara River, said of Gallegly's efforts. "You can't just go in there and take the dam down, because it's got all this sediment piled up behind it. It's a complicated problem."

Although Army Corps officials could not be reached Monday, Gallegly spokesman Tom Pfeifer said the agency has not yet decided to proceed with a dam-removal study.

He said approval must come from Washington, and it will take a few weeks before a decision is made.

While several estimates have been prepared, it would probably cost about \$75 million to remove the dam and clear out the tons of sediment trapped behind it.

In other matters, Gallegly urged the corps to complete a Santa Paula Creek flood control project. About 2,000 people were evacuated from their homes during heavy storms last February.

The first phase of the project is completed and \$16 million is needed to finish the work, Gallegly said.

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Tuesday, May 4, 1999

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Task Force on Dam Removal Is Planned

Environment: Many agree barrier on Matilija Creek in Ventura County is outdated. But the cost of tearing it down is daunting.

By CATHERINE SAILLANT, Times Staff Writer

[V]ENTURA--Saying the

proposal would bring wide, sandy beaches to much of Ventura County and protect threatened fish, dozens of environmentalists, scientists and officials from federal, state and local agencies met Monday to hash out a plan to dismantle Matilija Dam.

After hearing from experts, the 60 participants agreed to name a task force to answer several critical questions. Chief among them is: Who would pay for such a massive and costly project?

While early estimates have ranged as high as \$82 million, the true cost is not known and would depend on the process chosen to bring the dam down, panelists said.

What seems sure at this point, suggested Supervisor John K. Flynn and other panel members, is that the dam across the Ventura River would not be torn down unless the county is able to tap heavily into state and federal dollars.

Even if money is found, it would take 10 to 15 years to get through the studies and permits required before a single chunk of concrete is removed, panelists said.

The meeting was called to share information on the dam's history and problems associated with it. Roundtable members also identified issues that must be tackled before any work could begin, such as commissioning engineering and environmental studies.

Participants agreed that the dam should be retired because it has outlived its usefulness. It was built in 1948 to prevent floods and to store water for farmers and residents in the Ojai Valley. Today, it is nearly filled to the brim with mud and holds just 500 acre-feet of water.

"It can be stated categorically that it serves no flood-control purpose," said Art Goulet, director of the Public Works Agency. "We would like to see this [dismantling project] progress."

Environmentalists are concerned because the concrete wall acts as a 145-foot-tall barrier to endangered southern steelhead trout trying to reach 20 miles of prime upstream spawning grounds in Matilija Creek.

If the dam were dismantled, the population probably would rebound to about 2,000 adult steelhead, officials said. Removal would also allow sandy sediments to flow down the Ventura River and into the ocean, said Jerry Nowak, executive director of a beach erosion awareness group.

Beaches from Ventura to Point Mugu probably would widen by 30 feet, a process that would take several years, Nowak said. Formation of the task force demonstrates growing support for the dam's removal. A majority of the Ventura County Board of Supervisors and the National Marine Fisheries Services already have expressed interest in the plan.

Rep. Elton Gallegly (R-Simi Valley) has asked federal engineers to begin a study on how to remove the dam. Brian Miller, Gallegly's chief of staff, said the \$100,000 study is awaiting funding approval by Congress.

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Thursday, February 11, 1999

Project OK'd to Aid Endangered Steelhead

Wildlife: Casitas water district will build a \$2.3-million fish ladder at a Ventura River dam to enable the trout to reach spawning habitat.

By GARY POLAKOVIC, Times Staff Writer

[A] county water agency decided Wednesday to build a \$2.3-million fish ladder at a Ventura River dam as part of an ambitious plan to keep the endangered steelhead trout from sliding to extinction.

The Casitas Municipal Water District board unanimously voted to pursue measures that would improve river conditions for the fish and enable it to reach prime spawning streams in the Topatopa Mountains above Ojai.

The action establishes the river as a focal point for steelhead recovery in Southern California, where the prized game fish once abounded before coming under pressure from dams, pollution and water diversions.

Casitas district officials acknowledged their actions are motivated by legal concerns as well as environmental worries. The district has spent the past two years discussing with federal officials measures to save steelhead, and officials acknowledge the threat of a lawsuit forces them to act sooner.

* * *

One of those threatening suit is California Trout Inc., a pro-fishing group that contends Casitas' management of the river and Robles Diversion Dam conflicts with the Endangered Species Act and is pushing steelhead to the brink.

"It's an investment we need to make to protect the fish," district General Manager John J. Johnson said. "We want to take the high road so if they do decide to take us to court, we can tell the judge we are taking every reasonable action to take care of the fish."

But it appears very unlikely the Wednesday action will go far enough to fully restore the fish in the Ventura River or assuage critics of the agency, which manages the river to control floods and provide water to growers and residents in the Ojai Valley.

Cal Trout Executive Director Jim Edmondson described the decision by the district as "very encouraging," but added he intends to file suit Feb. 19 if the agency fails to produce a comprehensive plan in writing to protect the fish. Cal Trout filed a 60-day notice of intent to sue in mid-December.

"These fish are under full protection of the Endangered Species Act and we're very concerned about [actions that result in] take of the fish," Edmondson said. "This is a trust-but-verify situation."

One practice Cal Trout seeks to end is water diversions from the river to Lake Casitas, a practice Cal Trout says kills steelhead smolts trying to return to the ocean. But the district governing board rejected a staff proposal to suspend the practice for one year while the fish ladder is built. About 60,000 gallons have been diverted so far this year.

"Who's going to get the water: the fish or the people?" Casitas board member Bill Hicks said. "Isn't there some sort of maxim that the water should be used for the highest and best use?"

And costs for steelhead recovery clearly disturb some board members, who openly questioned how to pay for the fish ladder and other measures.

* * *

The \$2.3-million cost could be paid by state and federal grants or perhaps from a \$100-million fund the Clinton administration designated last month for salmon recovery in the west, officials say. The district's contribution to the project, however, could come from ratepayers.

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"The people who live in this district are going to have to end up spending the money," board member James W. Coultas said.

Johnson, however, said the district was going to have to build the fish ladder sooner or later. Fighting it and other steelhead recovery measures would only result in costly litigation, which in the end would incur greater expense and probably fail, he said.

The fish ladder at Robles Diversion Dam would consist of a series of underwater terraces to enable fish to climb the barrier and reach miles of high-quality spawning habitat on the north fork of Matilija Creek. Also, screens would be installed to steer smolts from the diversion intakes.

Steelhead proponents say changes at Robles Diversion Dam are a necessary precursor to the removal of the much larger Matilija Dam farther upstream.

That dam blocks about 20 miles of habitat once used by steelhead earlier this century.

The actions taken Wednesday by the Casitas district do not affect Matilija Dam.

Under the measures, the Casitas district, working with the National Marine Fisheries Service and the U.S. Bureau of Reclamation, will solicit proposals for the design and construction of the fish ladder, screens and steelhead monitoring system at Robles Diversion Dam.

Also, the board directed Johnson to work with federal officials to develop a comprehensive, long-term plan for steelhead management on the river.

At its core would be a "habitat conservation plan," which permits limited destruction of steelhead to ensure that vital operations continue on the river, as long as actions are taken to offset the losses and promote the fish throughout its range, said Jim Lecky, assistant regional administrator for the Marine Fisheries Service.

Other measures that could be taken to benefit steelhead include replacing road crossings and culverts that block fish migration, cleaning tributaries to enhance habitat and raising steelhead in hatcheries for release to streams.

"They deserve a lot of credit for stepping forward to work on this," Lecky said.

Ventura County has been at the heart of the steelhead debate since the southern population of the fish was declared endangered in August 1997.

Environmentalists last year launched a campaign to tear down Matilija Dam to benefit the fish.

Cal Trout plans to make the Ventura and Santa Clara rivers and the Santa Ynez River in Santa Barbara County ground zero in the fight to save the fish.

Last week the Marine Fisheries Service identified 140 waterways, including nine in Southern California, essential to steelhead recovery.

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Monday, March 8, 1999

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Freeman Dam Fish Ladder Spawns Debate Over Water Use

By GARY POLAKOVIC, Times Staff Writer

JUN 17 1999

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[W]ith the push of a button inside

the control room at the Freeman Diversion Dam near Saticoy, thousands of gallons of Santa Clara River water gushes through the dam's fish ladder.

In the eight years since it was built at a cost of \$2 million to help save the endangered southern steelhead trout, six adult fish are known to have passed through the concrete and steel contraption.

That is \$333,000 per fish, not counting the value of the water that could have gone to houses and farms on the Oxnard Plain, instead of washing out to sea.

"I would like to see some results for the loss of the water," said Dana Wisehart, who works for the United Water Conservation District, which operates the dam.

"I would like to see more fish. The water we put through here could be put to other uses. We spent all this money, let's get some results, doggone it."

Fish ladders like the one at Freeman Diversion Dam--the only ladder operating in Southern California--have been considered important tools to help fish reach spawning grounds blocked by impassable dams.

Just last month, the Casitas Municipal Water District agreed to build one at a cost of \$2.3 million at the Robles Diversion Dam on the Ventura River near Ojai, also to benefit the steelhead. But the high cost and marginal benefit of the Freeman ladder serve as an object lesson in how difficult it will be to bring steelhead back to Southern California streams. The problems at Freeman are stoking a debate over who should get the water, people or fish.

"We are somewhat concerned about the ladder. It's not operating as efficiently as it could be. It needs fine tuning," said Eric Shott, a biologist at the National Marine Fisheries Service. That agency is working with the U.S. Army Corps of Engineers and the United water district to find ways to get more steelhead past the 25-foot-high dam to their spawning grounds in the Upper Ojai.

As poorly as the Freeman ladder has performed, it has at least proven one thing: Steelhead still live in Southern California rivers.

Dam operators have annually counted about 400 smolt passing through a fish screen at the Freeman dam on their return trip to the ocean.

Many more juveniles are believed to wash over the top of the dam during storms.

This is good news to conservationists, because the very existence of the fish was hotly debated when the fish ladder was proposed for the dam a decade ago.

Since then, small numbers of steelhead have been seen by biologists in the Ventura River, Sespe Creek, Malibu Creek, the Santa Ynez River and Topanga Creek, Shott said.

* * *

They are all that is left of the thousands of fish that early this century migrated each winter from the ocean to spawning tributaries in local mountains.

The species was declared endangered in 1997, their numbers depleted by water diversions, dams, pollution and overfishing.

Steelhead are ocean-going rainbow trout that grow up to 2 feet in length and are prized by sports fishermen. Like salmon, they are relentless in their determination to migrate and spawn, swimming headlong into raging currents and astounding scientists with their navigation skills.

But officials are disappointed that so few fish have been seen using the Freeman dam fish ladder. Getting more steelhead past the dam is vital

because the Santa Clara River is the path to tributaries such as Sespe Creek, considered the best remaining steelhead habitat in Southern California.

One possible reason more adult fish haven't been observed is that some fish may be getting through the ladder without being seen. The ladder is a terraced staircase of switchbacks made of concrete and steel.

Once inside, fish ascend the dam step by step, leaping from one level to the next.

But water coursing through the fish ladder is so turbulent it could easily conceal a big fish.

"We may have a few more fish using the ladder than have been observed," Shott said.

But not necessarily. Since each adult female lays hundreds of eggs, even a few fish could account for the hundreds that come back down the river to the sea.

Another possible reason few fish show up in the ladder is because it is only operating a few months in the year, during the wet season.

It runs in March, believed to be the peak of the steelhead migration, and it runs for up to 48 hours after storms.

Any more use than that releases too much water, Wisehart explained.

About 5,000 acre-feet of water was released to enable the six steelhead known to have traversed the ladder to get over the dam. That is enough water to supply a city of 20,000 people for a year.

"It's going to be interesting if we begin using [more] water for steelhead," Wisehart said. "The people need to decide if we want an improved environment or to sustain what we have."

One reason fish may not be using the ladder is that they are having trouble finding it, said Jim Edmondson, conservation director for California Trout Inc.

The portal is a 4-foot square hole in a concrete wall on the extreme south end of the dam. Steelhead, following the currents, may reach the pool at the base of the dam and get confused, he said.

Edmondson proposed using divers to see if steelhead get stuck in the pool at the base of the dam during storms.

Beyond these theories, searching for fish is a tenuous proposition under the best of circumstances, as any fisherman knows.

* * *

Finding an endangered fish in a big waterway is like looking for a needle in a haystack.

For those reasons, Shott, at the Marine Fisheries Service, says his agency is committed not only to the Freeman fish ladder but also to the new one at Robles dam. But the design may be different.

"We're going to take a very close look at the design and construction of the ladder at Robles dam," Shott said. He said the Ventura River flows in a narrower channel, which should make it easier to funnel steelhead into a fish ladder.

Environmentalists say it's too early to lose faith in restoration efforts such as the Freeman fish ladder. It will take time for the steelhead to rebuild their numbers. High expectations at the beginning of the recovery process are unrealistic, said Mark Capelli, executive director of Friends of the Ventura River.

"It's taken 50 to 60 years to put steelhead into the condition they are in, and it's going to take a little while to restore them," Capelli said.

Thursday, March 25, 1999 RECEIVED

Discovery of Dead Trout Renews Debate on Dam

JUN 17 1999

[V]ENTURA--The discovery last week of a dead steelhead trout at the Freeman Diversion Dam has renewed debate over how the dam's fish ladder is operated.

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(FRONT DESK)

The 22-inch steelhead was found March 16 by biologists working for the United Water Conservation District.

The carcass was taken to Long Beach for analysis by federal wildlife biologists, who found that it contained thousands of eggs.

Officials are not sure how the fish died, but they say it was found in an area that adult steelhead do not frequent.

"The mystery is why it swam the way it did, because it came upstream and then went back downstream into an area it could have easily gotten out of," said Jim Kentosh, the district's manager of operations. "We don't know why it stayed there."

According to Kentosh and other officials, the fish negotiated the dam's fish ladder Feb. 13 but instead of swimming up the Santa Clara River, it turned right and went downstream, where it got caught in the district's fish screen bay. Feb. 13 was the last time the ladder was in operation.

The bay is where young smolt are trapped and steered toward the river and away from the diversion canal.

The fish apparently lived in the bay at least three weeks before it died.

Environmentalists who have been lobbying to protect the endangered steelhead hope the death will force water officials to reexamine their conservation efforts.

District workers said they are operating the dam and ladder according to federal wildlife protection standards and that their conservation efforts have been successful.

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Conejo Creek Dam Project Spawns Ire

Environment: Opponents say the stream is prime habitat for the endangered steelhead trout, but water officials have found no scientific evidence.

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JUN 17 1999

By COLL METCALFE, Times Staff Writer

ENTRIX, INC.
(FRONT DESK)

[P]lans to build a diversion dam

on Conejo Creek near Camarillo have raised the ire of conservationists who contend that the small stream is critical to the survival of southern steelhead trout.

Environmentalists hope to convince federal wildlife officials to designate the waterway as a prime habitat for the endangered fish.

"I think it's pretty clear that the creek is important for the species," said Ed Henke, an Oregon-based environmentalist who has championed initiatives to restore populations of the once-plentiful steelhead. "That, I think, is what the evidence is telling us here."

Yet proponents of the project say there is no evidence that indicates Conejo Creek is or ever was an important spawning habitat for the ocean-going fish.

They say the \$9-million dam is needed to satisfy the area's increased water demands and relieve pressure on an already overused system of underground aquifers.

"This is an issue that only recently came to our attention, because there's been nothing that would have indicated that this is steelhead habitat," said Donald Kendall, executive director of the Calleguas Municipal Water District, which is helping design the dam. "And quite frankly, I don't think there's ever been anything that's shown this is a sustainable habitat."

Like a slender thread weaving through the hills of east Ventura County, Conejo Creek begins in the Thousand Oaks area north of Hill Canyon and meanders south toward Camarillo before emptying into Calleguas Creek and the Pacific Ocean.

Last month, the National Marine Fisheries Service listed Calleguas Creek--along with the Ventura and Santa Clara rivers--among 140 western waterways absolutely necessary for the preservation of southern steelhead trout.

A final decision on whether to keep Calleguas Creek among those waterways deemed critical habitat for the rare fish is pending while the service hears arguments from both opponents and supporters.

Federal officials will meet today with conservationists and water district representatives to collect data needed to make their final decision.

If endorsed by the service, those waterways would be subject to strict controls that would limit development, road construction, diversion dams and sewage treatment.

Critics such as Henke said that because Conejo Creek empties into Calleguas Creek it, too, should be subject to the same restrictions.

"I think it's safe to say that if a steelhead swims up the Calleguas Creek it could also swim up the Conejo Creek," Henke said. "And I believe there's enough evidence to support that."

However, project supporters say the evidence is specious because it relies on neither empirical nor scientific analysis and that past studies conducted by state and federal agencies have not found conclusive evidence to suggest either Conejo Creek or Calleguas Creek are critical habitats for the fish.

They point out that most of the water that flows down Conejo Creek is treated discharge from the Hill Canyon Wastewater Treatment Plant in Thousand Oaks.

Ventura County has been at the center of the steelhead debate since it was added to the endangered species list in August 1997. No one knows exactly how many steelhead trout live in Southern California.

Last year, environmentalists launched a campaign to raze Matilija Dam so the fish could swim to their natural spawning grounds far upriver.

In another instance, pressure from environmentalists prompted the Casitas Municipal Water District last month to approve a \$2.3-million fish ladder at a Ventura River dam as part of a plan to aid steelhead migration.

Conservationists have also called for more stringent guidelines for water use in the western United States to protect the species, whose decreased numbers are blamed on pollution and closed spawning grounds.

Plans for the Conejo Creek diversion dam are already underway.

Engineers are finishing preliminary blueprints for the 3-foot earthen berm that would be located just south of where the creek crosses under the Ventura Freeway at the western edge of the Conejo Grade.

The dam project will be spearheaded by the Camrosa Water District and would be used primarily to supply irrigation to farmers in Camarillo and the Santa Rosa Valley.

If plans for the dam are scuttled, water district officials said, it will be a tremendous loss, particularly when newer and more novel concepts of water usage need to be found and exploited.

"The dam is important because we're reclaiming water that we would have had to import from the north," said Henry Graumlich, resource manager for the Camrosa Water District.

"[The dam] would cut at least some of our need for imported water, which is something we need to do."

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Feature Article

High Country News -- October 27, 1997 (Vol. 29, No. 20)



photo courtesy Lundberg Family Farms

FAMILY FARMERS: Organic rice farmers Harlan, Homer, Eldon and Wendell Lundberg

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(FRONT DESK)

Deconstructing the age of dams

by Marc Reisner

In the early fall of 1991, I got a call from a cheery young man named Bob Herkert, who introduced himself as the field manager for the California Rice Industry Association. He wanted to invite me on a "good will" tour of the Sacramento Valley rice-growing region, where he said I would see two salmon-blocking dams that one of Northern California's largest irrigation districts planned to blow up.

The irony of a water district eager (so he said) to demolish its own dams threatened to fell me.

Since the publication of my book, *Cadillac Desert*, in 1986, I had been anointed a Public Enemy by many Westerners, especially California irrigation farmers, and I figured that no farmer liked me less than one whose crop is rice. Californians tend to be blasé about the profoundly unnatural acts they have performed with water (the creation of Los Angeles, for example), but you can still slacken some natives' jaws when you inform them that their state raises half a million acres of rice. In fact, in the years following publication of my book, I was being paid decent money to exploit this fact on the lecture circuit, lampooning a monsoon crop grown in a desert state.

But if the rice farmers were as incensed with me as I suspected, why were they inviting me on a good-will tour? And if rice doesn't just like to soak up water but likes to stand knee-deep in water, how could a district full of rice farmers even think about destroying its water-diversion dams? It smelled like a setup, but I'd already agreed to go.

A setup it was. My welcoming committee was not the half dozen "friendly-as-hell-despite-everything-you've-said-about-them" farmers promised by Herkert, an innocent-looking country boy from Colusa, Calif., with killer political instincts; it was 19 tight-lipped farmers and industry leaders waiting with claws bared. After a debating session that, over lunch, came fairly close to a food fight, everyone settled down, we conceded each other some points, and a temporary truce was declared. Then my adversaries, whom I was secretly beginning to like, led me through the history that was about to culminate - perhaps for the first time in the American West - in an environmentally inspired deconstruction of dams. How could we have reached this point?



Gary Brown

SAFE PASSAGE: Western Canal Dam diverts water from Butte Creek into Western Canal

Three strikes against rice

Although rice has been grown in California since 1912, it wasn't until the last couple of decades that it began to acquire a sorry public image. One obvious argument against rice - especially in an overpopulated, semi-arid state - is its water demand.

Actually, rice raised on the most efficient California farms uses less water than an irrigated pasture of alfalfa, whose evapotranspiration demand is at least 4 feet per acre per year; rice grown on hardpan soils can survive on three and a half feet.

Yet the state's 400,000-500,000 acres of California rice guzzle roughly as much water as 6 million people in the Bay Area, and the gross crop value is only \$500 million or so. The Bay Area economy, which is largely dependent on imported water, is worth nearly \$200 billion, so one could argue that the rice region's water would be better used there. Earlier in the century, the same line of reasoning resulted in Los Angeles.

Meanwhile, the rice-growing district with by far the greatest thirst, the Glenn-Colusa Irrigation District, spent the 1970s and 1980s stonewalling fish and game agencies which asked for effective fish screens across the district's huge intake pipes at the Sacramento River.



California Rice Industry Association

BED-AND-BREAKFAST: Snow geese flock to a California rice field

Publicity about the obstructionist tactics of its law firm (Minasian, Minasian, Minasian, Spruance, Beber, Meith, and Soares - the name alone a dilatory strategy) was so damaging to the rice industry that the California Rice Industry Association helped overthrow the district's board of directors. Today, with a new board, law firm and general manager, the district has become one of California's most progressive.

Yet another public-relations meltdown came from rice farmers' use of pesticides. Concentrated in return flows from the heart of the Sacramento Valley, the chemicals entered the Sacramento River just upstream from the city of Sacramento, which draws some of its drinking water from the river. (If you are going to taint some city's water supply, it shouldn't be the state capital's.)

The residue was enough to affect the water's flavor, if not its potability, and even though the Sacramento Valley grows a hundred-odd crops - most of which are

chemically sprayed - suspicion fell mainly on rice.



California Rice Industry Association

Bob Herkert with son, Hans, is field manager for the California Rice Industry Association

Still, nothing was blackening the industry's reputation more than its habit of blackening the air. Rice stalks, or straw, are inordinately high in silica; it is tough stuff, and won't decompose as readily as most plant detritus. Harvesters leave the straw behind, and rice farmers have to get rid of it before they can plant next year's crop.

In Asian countries, most rice and wheat straw is converted to newsprint, or compressed into bricks for home construction - you can do all sorts of things with its durable cellulose.

In the United States, still content to gnaw its forests away, the market for agricultural straw is miniscule: it is most commonly used to control erosion in wildfire zones. Lacking an economic alternative, California's 2,000 rice growers simply burned it.

While the state Air Resources Board regulated the practice by issuing burning permits based on daily weather forecasts, interior California winds are notoriously shift. During one famous smokeout, a thunderhead-size plume from the rice region blew into Sacramento and set off smoke alarms in tony shops on Capitol Mall. With a dispatch some found startling, the state Legislature, in 1991, drafted a bill phasing out rice-straw burning over the next 10 years.

After some howling, the rice industry association decided to give in. Despite bitter objections from many of the farmers it represents, who sensed that any alternative to burning would cost more than matches and kerosene, the association endorsed the burning phaseout after inserting a contingency clause in the bill for hardship cases.

Meanwhile, to avert even more regulation, its members launched a pesticide-reduction program, switching to compounds that biodegrade more quickly and storing return flows in ponds to give the chemicals more time to break down.

The pesticide-reduction program was already a demonstrable success by the time the growers asked me to meet with them. Between 1983 and 1992, estimated rice pesticides entering the river declined from 40,000 to 218 pounds, an achievement that won a rare commendation from the California Environmental Protection Agency.

Burning was tougher. The only alternative straw-removal technique that seemed efficient and affordable - if you had a relatively cheap and ample water supply - was flooding fields after harvesting the rice. A number of farmers had already tried it, generally with success. Soils in the central Sacramento Valley tend to be fine, river-borne silts compressed over eons into something like pottery clay; its dogged impermeability is the main reason rice thrives where most other crops fail.

If you flood a field 6 inches deep in early October, you're still likely to have standing water in mid-November, when California's rainy season generally begins. By flooding the fields in the fall, when temperatures are still warm, the decomposition of the rice stalks is accelerated. Rain during winter and spring finishes the job.

And there was an unexpected boon: Growers who had experimented with fall flooding told of waking up on winter mornings, when the Pacific Flyway's waterfowl migration season was in full swing, and seeing ducks, geese and shorebirds mobbing their fields.

Waterfowl like water, of course, and many also like rice; harvesting typically leaves behind 200-300 pounds of grain to the acre. But the birds' interest in flooded rice fields was so striking that waterfowl biologists came in to see what was going on. They discovered a whole new water-based food chain that had evolved in a few weeks - midges, annelid worms, copepods, crayfish. It was a vast, diffuse, high-protein larder for the famished birds, whose migratory ordeal can claim at least a third of their body weight.

Sensing a spectacular opportunity, the rice industry association was poised to sell fall and winter flooding to environmentalists and a perhaps dubious public (What? They want even more water?) as the perfect synthesis of farming and habitat.

In 1992, The Nature Conservancy, keen on creating new habitat on private lands, hired me as a consultant to help it and the rice association deal with the vexing issue of finding more water. The amount necessary - probably hundreds of thousands of acre-feet with the burn phaseout in full force - assured that this would be no cakewalk.

To make the task more difficult, between 1987 and 1992, California experienced its severest drought since the Dust Bowl of the 1930s. Water rationing was so universal and in some places so harsh that memories of it would persist for a good while.

Yet the state's rice association began promoting winter-flooding just as the drought ended, while some elementary math - several inches of water applied to several hundred thousand acres - suggested that the program might require more water than that used by the cities of San Diego and San Francisco combined.

Even worse, growers would be drawing water from rivers in the fall, when flows are lowest and salmon migrations are under way. To maintain flows for salmon and steelhead and other users downstream, dams would have to release more water, and reservoir levels would drop; and when the next drought came, rationing would be even more severe.

In so many words, the rice growers, in complying with one environmental law - the Rice Straw Burning Reduction Act of 1991 - might violate half a dozen other laws or rules, including the Endangered Species Act. But they might also be creating new or better habitat for species - Aleutian Canada geese, Ross' geese, sandhill cranes, giant garter snakes - protected by the same act.

However ironic and bureaucratic the situation, the water-use conflicts were real, and biologists with California's Department of Fish and Game were the first to recognize them. While the state's waterfowl division waxed enthusiastic about flooding rice fields, its fisheries section was loudly skeptical.

In the environmental community, similar schisms showed up: A waterfowl-group biologist complained about environmentalists' "obsession with fish, fish and

only fish," while fish-rights activists skewered birders who portray waterfowl hunting "as a blood sport while murdering salmon is fine and dandy."

Another environmentalist - a real one, she called herself, not "a biologist on the payroll of some hunters' group" - grouched about a program whose hidden purpose was "to breed more ducks for rich hunters to kill."

John Roberts, the state rice association's unlikely executive director - a vegetarian Republican who was the original drummer with the rock group Kansas - was flummoxed by the environmentalists' skepticism, and called a couple of times a week to tell me so. Meanwhile, Herkert, the association's field manager, was running around looking for "fish-friendly" water, which seems to exist only in certain months of wetter years.

One strategem would have been to slow the burning phaseout, which had been put together on the assumption that markets for straw would materialize. Environmentalists and the administration of Republican Gov. Pete Wilson agreed on almost nothing except rice straw's potential as a substitute for lumber and pulp. However, finding a market would take time, and when the association's board flirted with a two- or three-year burn-phaseout delay, early reaction from the clean-air lobby caused them to drop the idea like a lump of plutonium.

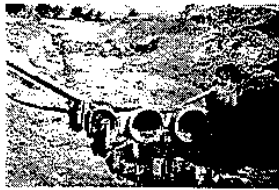


Photo courtesy Western Canal Water District

FREE PASSAGE: Fish in the creek will pass freely through pipes, where the old Western Canal Dam once blocked many of them. (See [correction](#) in HCH, 11/10/97.)

One group gets radical

The Western Canal Water District, where I had begun my good-will tour, was the one entity in the rice region that had managed to pick a clean route through this obstacle course.

The district had a couple of million dollars in the bank and it offered to invest it in the demolition of its two diversion dams and some relatively inexpensive piping. Whatever it took, the district said, in addition to helping migratory birds, it was going to do salmon more good than harm.

I had taken a liking to this district, in whose offices I had been roasted in 1991. Western Canal's most prominent board member, Homer Lundberg, was the angriest of my 19 adversaries, but ultimately I understood why: The Lundberg family runs the largest organic rice-growing operation in the United States and maintains a winter bed-and-breakfast for huge flocks of waterfowl - their droppings are the farm's principal fertilizer - by permitting no hunting on any of its land. ("It hurts," Homer told me later, "when we run what amounts to a pesticide-free wildlife refuge and people still don't think of us as environmentalists.")



Photo courtesy Western Canal Water District

Gary Brown, general manager of the Western Canal Water District, stands in one of the pipes

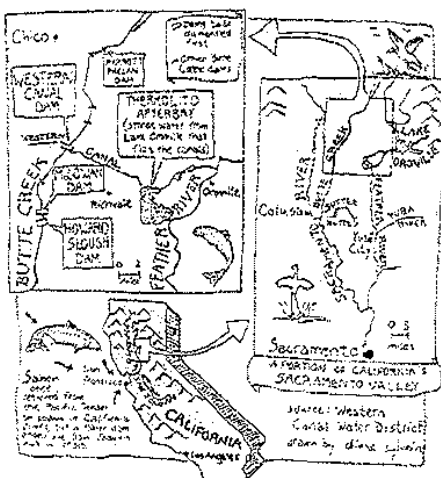
Gary Brown, the district's general manager, whose physique is extra-large and who looks faintly undressed without a holster and gun, is one of the most tireless conservationists I have ever met. Brown is also a rice-region rarity: a male in a hunting culture who doesn't hunt.

"I couldn't shoot at a duck," he once told me. "I'd feel too sorry if I actually hit one."

Western Canal's water supply flows by aqueduct from Oroville Dam, a gigantic state-financed structure on the Feather River, the Sacramento's biggest tributary. But as the canal meanders west and north, it irrigates only about half its district before running into Butte Creek, which drains another watershed. To get water to the district's 30,000 acres on the other side of the creek, two small retention dams block the creek. The dams keep Oroville water from going downriver and allow big pumps on the other side of the creek to suck it right back out.

These dams are semi-removable concrete-and-flashboard structures, connected to a river island; when their six-foot wooden flashboarding is taken out at the end of the irrigation season, an athletic salmon can jump upstream. The dams also have primitive fish ladders around the sides. Even so, a slow-learner salmon or steelhead can spend many hours trying to surmount them, and once it does, the unscreened pumps are powerful enough to suck up adult fish, not to mention inch-long juveniles.

"We're the second biggest rice district in the valley," mused Gary Brown. "Our water is cheap and we've got lots ... In a drought, we might be delivering through the winter, and then you can't drop the dams at all."



Diane Sylvain

"So we got to thinking, good God, we've got wild fall-run chinook in the river; that's the gene pool for the hatchery fish that keep the whole salmon industry from going down the tubes. We've got the spring-run chinook in here and they could go on the endangered species list. If that happens, commercial fishermen can't fish because the spring-run feeds off the coast with the fall-run, and you can't tell them apart. Meanwhile, everyone who diverts Sacramento River water from here to L.A. is gonna take a hit. We're on a spring-run tributary, so we get blamed. We've got steelhead in the creek, too.

"I have to be careful sometimes not to get too far ahead of my board, but this was a no-brainer. They all said: 'We're gonna take those dams out. And then we've got to go to work on the rest of the watershed.'

A 'lost cause' that wasn't

The district wasn't going to give up any water. It was simply going to run its water in pipes under Butte Creek instead of damming the creek to pump water across. But it was certainly going to spend some money.

Before dams, the spring-run was California's most abundant salmon race, the stock that sustained a now-extinct inland fishery.

Spring-run spend months hunkered in cold river pools before they run up Sierra rivers in the fall, crashing through Class V rapids and leaping low waterfalls. They do not go ripe (inedible) until the final spawning surge, so they were fished inland, where it was easier than catching them at sea.

Some 700,000 salmon used to stream through the Golden Gate and spawn in 40-odd Sierra streams; 21 turn-of-the-century canneries processed their flesh.

When the Age of Dams flowered after World War I, the species began to disappear in river after river. Shasta Dam and some hydro projects upriver knocked out the upper Sacramento run, the greatest of all. The San Joaquin run, another 150,000 spawners, went to oblivion in 1950, when Friant Dam went up across the lower mainstem. Runs of 20,000, 30,000, 50,000 fish went extinct on other rivers as more giant dams were built in the '50s, '60s and '70s. The new structures were so high that their reservoirs sometimes buried middle-size dams upstream.

By the late 1980s, pure spring-run stock spawned in only three or four small Sacramento River tributaries, one of which was Butte Creek. But neighboring watersheds to the north, Mill Creek and Deer Creek, were obstructed by fewer dams, and until the 1990s, efforts to rebuild the vanishing stocks focused mainly on them.

"Butte Creek," says Paul Ward, a Department of Fish and Game biologist assigned to spring-run habitat, "was widely perceived as a lost cause."

Along its valley reach, eight irrigation diversion dams had been built; upstream of those diversions, in a gorgeous, deeply incised volcanic canyon, are two small hydropower dams owned by Pacific Gas and Electric and a private hydro project spurred by subsidies from Congress during the 1970s oil scares.

The fish are delayed, at least, by the rice growers' diversion dams, and, if they make it into the canyon they come to the first hydro dam, a two-story structure that some salmon can jump when flows are high and the dam becomes a waterfall.

Spawner counts fluctuated greatly from year to year, but the unmaking of California's natural hydrologic regime pointed to an inexorable decline. Finally, during the 1987-92 drought, the total state population was estimated at fewer than 500 fish.

Then in 1993, the drought was chased off by a banner year, which rushed the juveniles to sea before too many were devoured by predators or captured by the huge pumps in the delta, which ship water to Central and Southern California. Two years later, in 1995, when spring-run from the Class of 1993 returned to spawn, there was great early runoff for a clean upriver migration.

In the fall of that year, so many fall-run spawners were coming back to Butte Creek that farmers got off their harvesters and drove over to take a look.

At the 10-foot Parrott-Phelan dam, just outside the city limits of Chico, Gary Brown watched six big spawners trying to leap the sloping downstream face - at once. During 1979, only 10 fish had made it as far as Parrott-Phelan Dam.

By early winter of 1993, the end of the run, California state biologists had counted at least 7,500 fish - the most since World War II, and more than twice the number in all other streams combined.

Butte Creek earns respect

A couple of years earlier, if you mentioned Butte Creek, no one seemed to know where it was. Now everyone did.

The assistant general manager of Southern California's Metropolitan Water District came up for a look, along with several members of his staff. Since half of Southern California's supply comes from Northern California, and since a spring-run listing might shut down the delta pumps for long periods (listing the winter-run chinook had already produced that result), the Met had a vital stake in salmon recovery.

Representatives of San Joaquin Valley agriculture were in the same boat. They showed up on the heels of their sparring partners, lawyers with the Natural Resources Defense Council and the Environmental Defense Fund. Herkert and I, who were busy running this tour service, wondered whether we should lease a Gray Line bus.

Fish and Game biologists, meanwhile, had sensed a larger opportunity in Western Canal's decision to take down its two dams. The original plan involved an under-the-river siphon to get water to the other side of the district, and little else. Now the state wanted to expand its scope.

If some lateral canals were joined to the district's northside canal, and some water exchanges were worked out, then smaller districts up- and downriver could demolish their own Butte Creek dams; fuller flows would remain in the creek.

The Bureau of Reclamation, which dreaded a spring-run listing as much as anyone, agreed to fund a \$130,000 feasibility study, even though none of the districts were in its immediate service area. The study concluded that Fish and Game's scheme made plenty of sense. However, the expanded project - which would take out two more dams (including the tallest), relocate a troublesome diversion on nearby Big Chico Creek, and add several miles of canals - would nearly triple the original \$3 million cost.

The two downriver districts that agreed to take out their dams were unwilling to contribute, even though they lease land to duck clubs where memberships can cost more than a Lamborghini car.

In the end, financial rescue came mainly from two sources, each improbable until you fathomed what was at stake: the Metropolitan Water District and farmers from San Joaquin Valley.

The money was already there, waiting to be spent. The Central Valley Project Improvement Act, enacted in 1992, created a Restoration Fund, financed mainly by surcharges on San Joaquin water deliveries, that had been looking for projects exactly like this. A couple of years later, several of the state's urban water districts, principally the Metropolitan Water District, embraced enlightened self-interest and created a similar fund, which is known as Category Three, with nearly identical goals.

A week after the disbursing committees for both funds agreed to a three-way split with the Western Canal Water District, I called Gary Brown to offer congratulations. The shock of partnering with the most hated urban water district in the West still had him in the recovery room.

"A few years ago," he mused, "I might have bet 500 bucks that no one from the Metropolitan Water District would voluntarily set foot in our district. The only thing less imaginable than that was hearing my board thank God that they did."

Dams will fall ... like dominos?

This August, the three siphons, each one 10 feet in diameter, were being laid into place under Butte Creek, replacing the district's diversion dams.

Constructing the lateral canals comes next; the dams will come down in midsummer of next year.

The old salmon-trapping diversion on Big Chico Creek, which hosts fall-run fish and occasionally some spring-run, has already been relocated and fitted with a state-of-the-art fish screen. During critical migration periods, 40 cubic feet per second of extra flow is now reserved for the stream.

Meanwhile, in Washington state, on the Elwha River, the two structures that top most people's list of dams that ought to be destroyed first are still in place, thwarting the restoration of salmon runs that once numbered in the thousands. Their removal has been planned, discussed and negotiated for a number of years; the betting odds are that it will be years before they come down.

With the possible exception of a dam in eastern Oregon, it is the Western Canal, McGowan and Howard Slough dams on Butte Creek that are going to be the first Western dams dismantled solely for the sake of fish. In California, they probably won't be the last. (See [correction](#) in HCN, 11/10/97.)

With some funds from the National Fish and Wildlife Foundation and the Hewlett Foundation, William M. Eier Associates, a fisheries consulting firm, and I are assessing the possibility of removing, or at least modifying, the two Pacific Gas and Electric dams that block salmon access to the pristine upper canyon reach of the Butte Creek.

If the quality of the habitat seems to argue for removal or modification, PG and E has promised to be "open-minded."

A similar assessment may soon be under way on Battle Creek, a more developed small-hydro stream that could, according to some biologists, host even more salmon than Butte Creek.

Meanwhile, watershed associations joining landowners and conservationists have been formed to restore Mill and Deer creeks. Last January, when runoff reached record levels during a 40-inch storm series, nature enlisted in its own cause, blowing out a Deer Creek dam.

Can other Western states find inspiration in this? That is the tantalizing question, especially if one subscribes to the notion that California is such a peculiar state that some things that happen here can occur nowhere else. Pet cemeteries, three-hour commutes (one way), and billion-dollar wildfires may be unique to California; what about consensus on removing dams?

For Butte Creek's dams to come down, a remarkable set of circumstances had to come together. The rice-straw burning phaseout forced farmers to look to flooding as an alternative. The potential impact of fall water diversions forced them to explore dramatic mitigation measures - among them the removal of dams.

Meanwhile, the drought, which hastened the stupefying decline of the spring-run and other fisheries, forced everyone to get serious about saving fish. The spectacular rebound of Butte Creek's salmon with the dams still in place let people imagine how things might be if we made life easier for the fish.

At the same time, a Bay/Delta Accord, negotiated in 1994 as a kind of Bosnian truce on water wars, gave urban water managers, farm-industry leaders and environmentalists an opportunity to know each other - which is to say, to stop demonizing each other. Erstwhile antagonists have become, if not exactly friends, then at least friendly. More important, they discovered that they have the same goals.

In its scarcity, a vanishing species attains peculiar majesty: A spring-run endangered listing might mean that fishermen can't fish, farmers can't farm and environmentalists lose the Endangered Species Act in the political whirlwind that follows. That has driven environmental restoration in California, the nation's wealthiest state, and now it has become a growth industry.

The Central Valley Project Improvement Act Restoration Fund is amassing \$40 million to \$50 million a year; contributions are piling up faster than they are being spent. Category Three funders have pledged \$180 million over three years. Last year, California voters, who have finally lost patience with the initiative

process (most measures on the ballot lost), still showed their environmental colors by approving Proposition 204, a water-and-restoration package contributing about half a billion dollars more. A matching federal contribution could double the amount.

Suddenly, there is all kinds of money around that can be spent - that has to be spent - on restoration. California's environmentalists have been on the losing side of many, if not most battles, but now, at least, they are rich.

Ty Barbour photo

Marc Reisner writes from the Bay Area of San Francisco

It cost a great deal of money to build thousands of dams throughout the American West. It will cost a lot of money to take some of them down.

You need money for replacement power, for new water-delivery infrastructure, for buyouts of affected parties, for indemnification. You need money to get rid of accumulated silt and debris behind dams, if you can figure out what to do with it. Thanks to money - and to an odd, serendipitous consensus - dam deconstruction has acquired serious momentum in California. It has even captured the imagination of people more used to lobbying for new dams.

If history tells us anything, what happens in California is going to happen elsewhere. That is not always a curse.

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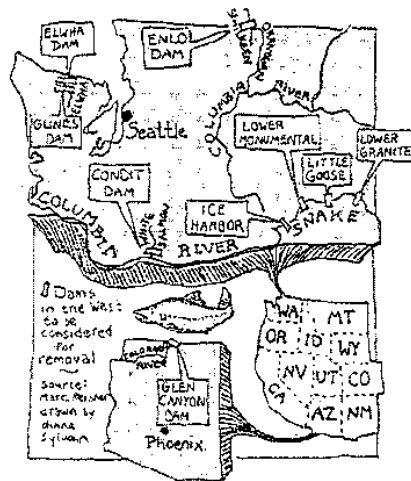
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Feature Article

High Country News -- October 27, 1997 (Vol. 29, No. 20)



Diane Sylvain

Dam deconstruction - what's next?

by Marc Reisner

Here are some of the other dams under attack throughout the West:

Elwha River dams, Olympic Peninsula, Washington

Built decades ago, these two dams have nearly destroyed what was once, given the host river's size, a salmon fishery nonpareil. Estimates of the Elwha ancestral runs go higher than 350,000 fish; among them were some of the largest salmon ever seen, weighing over a hundred pounds. Technical experts believe that the dams can be removed for less than \$25 million, but watershed restoration could add substantially to the cost. Now and then, the Clinton administration displays toughness and persistence, and it has here. The idea is strongly supported by Washington's major newspapers and, according to poll samplings, by most residents of the state. The one serious opponent is Republican Sen. Slade Gorton, who takes a position that may be unprecedented in U.S. Senate history: Spending federal money to remove the dams, he says, would be unfair

to taxpayers in other states. (Presumably, Gorton has no problem with U.S. taxpayers subsidizing Columbia River dams and his constituents' bargain-basement hydroelectric rates, which are among the cheapest in the world.) Gorton's opposition may appear hypocritical, to put it gently, and seems inspired by an eagerness to oppose almost anything Clinton supports. But the senator, a former prosecutor, is a tenacious adversary.

Condit Dam, White Salmon River, Washington

Built three miles up this lower tributary of the Columbia River, in 1913, Condit Dam eliminated a productive salmon fishery, though not an extraordinary one like the Elwha's. Its power production averages only 8-10 megawatts, but the dam is 125 feet high; cost-of-removal estimates range from \$10 million to \$24 million. American Rivers and numerous other organizations have lobbied strenuously for dam removal. There appears to be no opposition, even from the corporate owner, which faces a tough relicensing fight. Odds that the dam will be taken down look good.

Enlo Dam, Similkween River, Washington/Canada

Although it has been decommissioned for years, Enlo Dam, built early in the century on this Okanogan River tributary, still sits there, blocking salmon passage for 320 miles. There are no fish ladders. Only 35 feet high, the dam could be removed at relatively low cost. However, the Okanogan Public Utility District has proposed to re-operate it, and, according to John Volkman of the Northwest Power Planning Council, "Canada isn't sure it wants salmon with U.S. diseases moving back upriver." Spawners that make it as far as Enlo Dam have already trespassed beyond eight big dams on the Columbia reach. According to Volkman, "They deserve a break."

Lower Snake River Dams, Washington

These four federally built structures - Ice Harbor, Lower Monumental, Little Goose and Lower Granite - have catastrophically disrupted one of the most far-ranging inland salmon migrations in the world. Some determined salmon still reach Idaho's Stanley Basin via the Columbia, Snake and Salmon rivers, having swum more than 800 miles and surmounted eight large dams, but at Redfish Lake - named after the spawning coloration of many thousands of sockeye salmon - there are only ghosts. A decade ago, the idea of removing the four lower Snake dams would have seemed far-fetched, to say the least, but \$3 billion has gone for salmon restoration in the Columbia Basin, and overall the fishery is still in decline. Last winter, the Corps of Engineers, which built the dams, released a consultant's study that calls removal the most effective and cost-efficient restoration strategy. Recently, the Idaho Statesman, the state's most influential newspaper, endorsed the idea (the dams aren't in Idaho). Trade-offs are daunting: Each dam produces 300-400 megawatts of power, and they raise river levels for barge traffic, which is an important facet of the regional economy. But then, so were salmon.

Glen Canyon Dam, Arizona

In an interview for a television documentary based on Cadillac Desert, which aired recently on PBS, former Arizona Sen. (and reincarnated American hero) Barry Goldwater averred that, if Glen Canyon Dam were before the Senate today, "I'd vote against it ... Water is important, but it isn't that important."

Goldwater's remark may have galvanized a nascent campaign to drain Lake Powell, if not get rid of the dam. David Wegner, formerly the Bureau of Reclamation's environmental expert in the region, and the Sierra Club and David Brower, among others, have endorsed the idea. But some environmentalists believe this is a truly quixotic campaign, and the dam's constituency - which includes Southern California - seems unopposable for now.

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Spring salmon becoming abundant in Butte Creek

By Michael Gardner - E-R Sacramento Bureau

Spring run salmon, being considered as an endangered species, returned to Butte Creek last year in record numbers.

Counters recorded 20,200 spring run adults in 1998, according to the State Department of Fish and Game.

"That's an astronomical record. That's the highest we have ever seen," said fisheries biologist Paul Ward.

The previous high was 8,700 recorded in 1960; the worst was 1979 with just 10 returning adults, Ward said.

Fish run numbers were also up elsewhere: Big Chico, Mill and Deer Creeks, according to Ward.

On Big Chico Creek, the returns numbered 369 in 1998 compared to a sighting of just two adults in each of the previous two years.

It was such a good year that a few "strays" were also spotted in Little Chico Creek in 1998, said Ward.

The spring run migration to and from spawning grounds in north state creeks was aided by high flows in 1995 and again when they returned as adults in the El Niño year of 1998, he said.

And, the wet year meant the state could slow operations at the giant pumps diverting water southward through the Delta. The force of the diversion sucks many salmon off-track into the Delta maze where they get lost and often killed by the pumps.

The federal Fish and Wildlife Service is expected to rule in March on whether the spring run should be listed as "endangered." It is already listed as "threatened" by the state Department of Fish and Game.

Despite the recent trend upward in spawning adults, it's unlikely fisheries officials would consider delisting the spring run until there is a 5-to-10-year stretch of steady improvement, Ward said.

Noting salmon populations have been up and down in the past years, Ward said "It's classic in a species in decline: boom or bust."

Farmer Les Heringer, who has been active in efforts to preserve salmon runs, is obviously pleased at the numbers counted on Butte Creek.

"We're out here working everyday with the environment. These fish are part of the environment. It makes us feel good when we see a lot of fish in the creek. It means we're doing our job right too," he said.

"Farmers along Butte Creek have done a lot to expedite the movement of the fish," continued Heringer, manager of the M&T Ranch.

Heringer was instrumental in the compromise deal that relocated M&T's diversion pumping facility off of Big Chico Creek where it posed risks to migrating salmon. The diversion is now on the Sacramento River.

"I think we all like to see the creeks full of fish," he stressed.

While accepting some credit, Heringer said better rainfall over the past few years is what's really boosted salmon, which rely on flows to get from

the creeks to the ocean.

"The most important thing we've seen is a return from drought years to above normal rainfall. Mother Nature has the control over that," he said.

Salmon juveniles migrate to the Pacific Ocean where they spend up to three years before returning to spawn and die. That's why a good year like 1995 led to a high return rate in 1998.

The spring run count over the last four years in area creeks:

	1998	1997	1996	1995
Butte Creek	20,200	635	1,413	7,000
Big Chico Creek	369	2	2	200
Deer Creek	1,879	466	614	1,295
Mill Creek	424	200	252	320

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